REMARKS

The following remarks are provided in response to the Office Action mailed February 3, 2005 in which the Examiner:

- rejected claims 1-3, 5-9, 26-27, 29-31, and 33-38 under 35 U.S.C. §102(e) as being anticipated by United States Patent No. 6,452,650 to Nakao et al. (hereinafter Nakao);
- rejected claim 4 and 32 under 35 U.S.C. §103(a) as being unpatentable over Nakao in view of United States Patent No. 5,087,664 to Sugino et al. (hereinafter Sugino);

The applicants respectfully request reconsideration of the above referenced patent application in view of the amendments and remarks set forth herein, and respectfully request that the Examiner withdraw all rejections.

Allowable Subject Matter

The applicants acknowledge that the Examiner allowed claims 10-14 and 16.

35 U.S.C. §102(e)

The Examiner rejected claims 1-3, 5-9, 26-27, 29-31, and 33-38 under §102(e) as being anticipated by Nakao. For at least the foregoing reasons the applicants traverse the Examiner's rejection.

To establish a *prima facie* case of anticipation under §102, the Examiner must supply a single prior art document that alone teaches every element and every limitation of the claim being rejected. If the Examiner cannot show that the single prior art document asserts each and every element and limitation of the applicants' claim, then the Examiner has failed to establish a *prima facie* case of anticipation for that claim. To overcome the Examiner's anticipation rejection, the applicants must only demonstrate that the cited prior art document fails to teach one element or limitation present in the claim.

Independent claim 1 recites in a salient portion:

> . . . forming a layer of second material between the two substrates of the stacked device, **wherein the second material causes a reaction in a portion of the first material**.
> (emphasis added)

The Examiner alleges that Nakao column 16, line 65 bridging column 17, line 13 and Figures 1-3 teach the second material causing a reaction in at least a portion of the first layer of material. The applicants disagree. The cited portions of Nakao indicate that "**[t]hereafter**, polymerization of the polymerizable monomers with the oligomers **is made by irradiation of ultraviolet [light]** . . ." (emphasis added) (See Nakao, column 17, lines 4-5, and Figure 3(c) "Irradiation of ultraviolet"). The applicants assert that the use of "thereafter" indicates that it is not the mere introduction of ". . . a mixture of polymerizable monomers, oligomers, and polymerization initiators" between the substrates that initiates the polymerization reaction but **the exposure to the ultraviolet light subsequent to the introduction of the mixture that initiates the polymerization reaction**. Said alternatively, the polymerizable monomers, oligomers, and polymerization

initiators do not react by themselves to form a polymer in the absence of ultraviolet light. The applicants assert that the polymerization taught by Nakao requires irradiation by ultraviolet light and does not, as recited by independent claim 1, teach a second material causing a reaction in the first material. Accordingly, the applicants respectfully request that the Examiner allow independent claim 1.

Currently amended independent claim 26 recites in a salient portion:

> . . . reacting a portion of the layer of material, wherein the reaction results in the portion of the layer of material **increasing in volume**. (emphasis added)

The Examiner alleges that column 16, line 65 bridging column 17, line 13 and Figures 1-3 teach the portion of the layer of material increasing in size. The applicants respectfully point out that nothing in the cited portion of Nakao indicates reacting a portion of the layer of material wherein the reaction results in the portion of the layer of material **increasing in volume**. In particular, Figure 3(a) discloses a distance d1 between the transference electrodes 12. Figure 3(d) illustrates that, following the vacuum injection of a plurality of materials and ultraviolet polymerization, the distance d1 between transference electrodes 12 remains the same. Further, "[a] distance between the two substrates 11 (cell gap) **d1 is kept uniform** with spacers 15 of resin beads. . ." (emphasis added) (See Nakao column 16 lines 60-62) As there is no indication that the vacuum injected materials occupy less than the entire volume between the transference electrodes 12, the distance d1 between the transference electrodes 12 is constant, and until the pressing force is applied to the panels the materials do not extrude or squeeze out, **the vacuum injected materials cannot increase in volume as a result of the ultraviolet**

polymerization reaction. Accordingly, the applicants respectfully request that the Examiner allow currently amended independent claim 26.

Independent claim 30 recites in a salient portion

> . . . wherein a reaction between the first material and the second material fills a portion of the area between the two substrates with **a polymer foam as a product of the reaction**
> (emphasis added)

Independent claim 35 recites a similar limitation. The Examiner alleges that Nakao column 16, line 65 bridging column 17, line 13, and Figures 1-3 teach that the reaction results in the production of a polymer foam. The applicants disagree. The applicants assert that a polymer (element 13) including a dispersion of liquid crystal droplets (element 14) is not a polymer foam as recited by independent claim 30. (See also column 16 lines 23-34 and the Abstract lines 2-4). Figures 3(a) and 3(b) indicate spacers 15 and cell gap d1; however Figures 3(c) et seq. illustrate, and the corresponding description confirms, that the spacers 15 are replaced by "a mixture of liquid crystals, polymerizable monomers, oligomers, and polymerization initiators" by way of vacuum injection. Further, the ultraviolet polymerization produces a ". . . polymer network type liquid crystal element in which spherical liquid crystal droplets 14 as liquid crystal materials are dispersed in series in the polymer matrix." **The cited portions of Nakao do not teach that the vacuum injected materials, whether before or after polymerization under ultraviolet light, comprise a polymer foam as recited by independent claim 30**. Accordingly, the applicants respectfully request that the Examiner allow independent claims 30 and 35.

As dependent claims 2-9, 27, 29, 31-34, and 36-38 depend from patentable independent claims, the applicants further request that the Examiner allow dependent claims 2-9, 27, 29, 31-34, and 36-38.

35 U.S.C. §103(a)

The Examiner rejected claims 4 and 32 as being unpatentable over Nakao in view of Sugino. The applicants affirm that dependent claims 4 and 32 are patentable as each depends on a patentable independent claim (independent claims 1 and 30 respectively) as explained with reference to applicants' response to the §102 rejection.

CONCLUSION

For at least the foregoing reasons, the applicants submit that they have overcome the Examiner's rejection and that they have the right to claim the invention as set forth in the listed claims. The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

Please charge any shortages and credit any overcharges to our Deposit Account number 02-2666.

Respectfully submitted,

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5/3/05
Dated

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